ERMI reports
Li, Charles
to:
Stephen Vesper
07/06/2009 09:00 AM
Cc:
Shawn Siefring, "Bonafiglia, Cherrie"
Hide Details
From: "Li, Charles" <cli@EMSL.com>
To: Stephen Vesper/CI/USEPA/US@EPA,
Cc: Shawn Siefring/CI/USEPA/US@EPA, "Bonafiglia, Cherrie" <cbonafiglia@EMSL.com>
History: This message has been replied to.

4 Attachments


370906170 report, call 9.pdf

370906264 report, call 10.xls

370906264 report, call 10.pdf

370906170 report, call 9.xls

Hi, Steve,

Please see the attached ERMI reports in both pdf and Excel files. Please let me know if you have any questions.

P.s. We have purchased more RERMI kits from Roche for analyzing your dust samples.

Thanks

Charlie

Quanyi" **Charlie**" Li Ph.D.
PCR Laboratory Director
EMSL Analytical, Inc
107 Haddon Ave, Westmont, NJ 08108
Tel: 800-220-3675 ext.1283
Fax: 856-858-0648
Email: cli@emsl.com

EMSL Analytical, Inc. - Microbiology

107 Haddon Ave., Westmont, NJ 08108 Tel: 800-220-3675 Fax: 856-858-0648

Client: US EPA
26 W M. L. King Drive
Cincinnati, OH 45268
Attention: Dr. Steve Vesper
Project: Call # 9 Boston

EMSL Order ID: 370906170
Date Received: 6/23/2009
Date Analyzed: 7/2/2009
Date Reported: 7/7/2009

Environmental Relative Moldiness Index (ERMI) by Mold Specific Quantitative Polymerase Chain Reaction (MSQPCR) (EMSL Test Code:M050)

based on USA EPA SOP MERB-020, Revision No. 3, 7/11/02

Lab Sample Number	6170-1	6170-2	6170-3	6170-4
Client Sample ID	EMMLIV 0046	EMMLIV 0047	EMMLIV 0048	EMMLIV 0049
Sample Location	-	-	-	-
Sample size	4mg Dust	5mg Dust	3mg Dust	5mg Dust
EPA 36 Species Identification	cells/ mg dust	cells/ mg dust	cells/ mg dust	cells/ mg dust
Group 1				
Aspergillus flavus	ND	2	ND	ND
Aspergillus fumigatus	ND	ND	ND	ND
Aspergillus niger	ND	20	2	22
Aspergillus ochraceus	ND	ND	ND	ND
Aspergillus penicillioides	15	126	ND	19
Aspergillus restrictus	ND	8	5	ND
Aspergillus sclerotiorum	ND	ND	ND	ND
Aspergillus sydowii	7	12	ND	4
Aspergillus unguis	ND	4	ND	ND
Aspergillus versicolor	61	ND	343	70
Eurotium (A.) amstelodami	5	95	62	6
Aureobasidium pullulans	204	2,129	117	22
Chaetomium globosum	ND	1	ND	ND
Cladosporium sphaerospermum	1	1	3	2
Paecilomyces variotii	ND	4	ND	ND
Penicillium brevicompactum	ND	ND	ND	3
Penicillium corylophilum	ND	11	65	2
Penicillium crustosum (group2)	ND	ND	ND	ND
Penicillium purpurogenum	ND	ND	ND	ND
Penicillium spinulosum	ND	ND	93	17
Penicillium variabile	ND	ND	4	ND
Scopulariopsis brevicaulis	ND	ND	0	ND
Scopulariopsis chartarum	ND	ND	ND	ND
Stachybotrys chartarum	ND	ND	ND	ND
Trichoderma viride	ND	5	378	11
Wallemia sebi	ND	4	9	2
Sum of the Logs	**7.0**	**14.7**	**15.8**	**10.7**

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Environmental Relative Moldiness Index (ERMI) by Mold Specific Quantitative Polymerase Chain Reaction (MSQPCR) (EMSL Method:M050)

based on USA EPA SOP MERB-020, Revision No. 3, 7/11/02

Lab Sample Number	6170-1	6170-2	6170-3	6170-4
Client Sample ID	EMMLIV 0046	EMMLIV 0047	EMMLIV 0048	EMMLIV 0049
Sample Location	-	-	-	-
Sample size	4mg Dust	5mg Dust	3mg Dust	5mg Dust
EPA 36 Species Identification Group 2	cells/ mg dust	cells/ mg dust	cells/ mg dust	cells/ mg dust
Acremonium strictum	ND	ND	ND	ND
Alternaria alternata	17	91	7	4
Aspergillus ustus	ND	3	ND	ND
Cladosporium cladosporioides I	21	29	3	7
Cladosporium cladosporioides II	ND	ND	5	ND
Cladosporium herbarum	5	3	ND	ND
Epicoccum nigrum	7	103	11	6
Mucor and Rhizopus group	ND	28	8	5
Penicillium chrysogenum	ND	70	2	ND
Rhizopus stolonifer	ND	ND	ND	ND
Sum of the Logs	**4.1**	**9.6**	**4.1**	**2.9**
ERMI Value:	**2.9**	**5.1**	**11.6**	**7.8**
ERMI Interpretation* (see graph and description below)	Level 3	Level 4	Level 4	Level 4

ND=None detected; the result is below the analytical detection limit or not present.

Charlie Li Ph.D., Lab Director
Or Approved EMSL Signatory

AIHA EMLAP Lab ID # 100194

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based on USA EPA SOP MERB-020, Revision No. 3, 7/11/02

Lab Sample Number	6170-5	6170-6	-	-
Client Sample ID	EMMLIV 0050	EMMLIV 0051	-	-
Sample Location	-	-	-	-
Sample size	5mg Dust	5mg Dust	-	-
EPA 36 Species Identification	cells/ mg dust	cells/ mg dust	cells/ mg dust	cells/ mg dust
Group 1				
Aspergillus flavus	ND	ND	-	-
Aspergillus fumigatus	3	ND	-	-
Aspergillus niger	3	ND	-	-
Aspergillus ochraceus	ND	ND	-	-
Aspergillus penicillioides	8	8	-	-
Aspergillus restrictus	ND	ND	-	-
Aspergillus sclerotiorum	ND	ND	-	-
Aspergillus sydowii	3	ND	-	-
Aspergillus unguis	ND	ND	-	-
Aspergillus versicolor	141	ND	-	-
Eurotium (A.) amstelodami	10	10	-	-
Aureobasidium pullulans	613	483	-	-
Chaetomium globosum	ND	ND	-	-
Cladosporium sphaerospermum	2	ND	-	-
Paecilomyces variotii	ND	ND	-	-
Penicillium brevicompactum	ND	ND	-	-
Penicillium corylophilum	ND	ND	-	-
Penicillium crustosum (group2)	ND	ND	-	-
Penicillium purpurogenum	ND	ND	-	-
Penicillium spinulosum	27	ND	-	-
Penicillium variabile	ND	ND	-	-
Scopulariopsis brevicaulis	ND	ND	-	-
Scopulariopsis chartarum	ND	ND	-	-
Stachybotrys chartarum	ND	ND	-	-
Trichoderma viride	ND	3	-	-
Wallemia sebi	1	ND	-	-
Sum of the Logs	**10.0**	**5.1**	**-**	**-**

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Environmental Relative Moldiness Index (ERMI) by Mold Specific Quantitative Polymerase Chain Reaction (MSQPCR) (EMSL Method:M050)

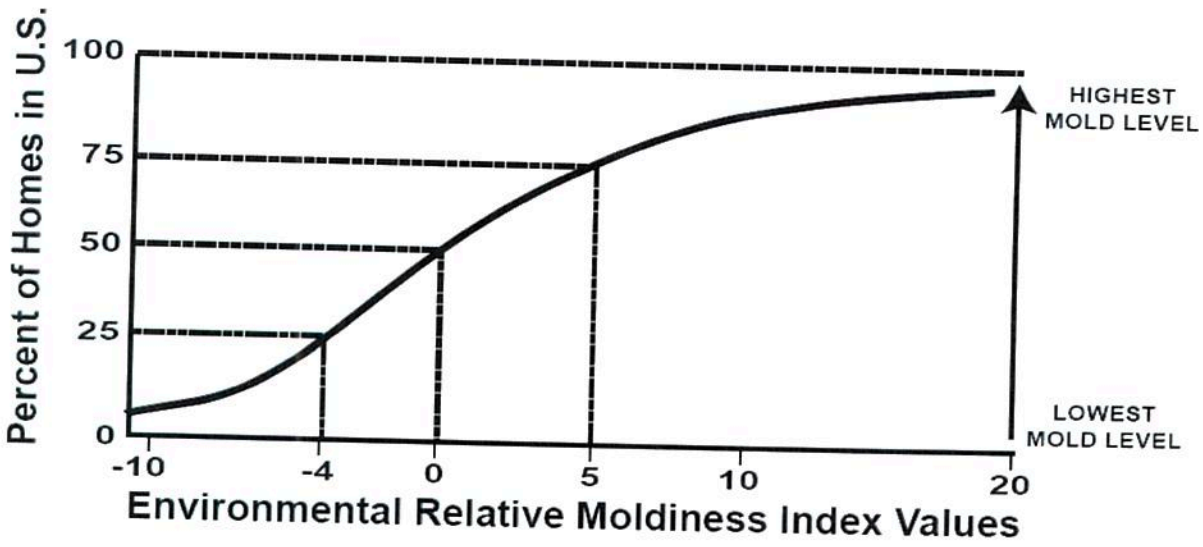
based on USA EPA SOP MERB-020, Revision No. 3, 7/11/02

Lab Sample Number	6170-5	6170-6	-	-
Client Sample ID	EMMLIV 0050	EMMLIV 0051	-	-
Sample Location	-	-	-	-
Sample size	5mg Dust	5mg Dust	-	-
EPA 36 Species Identification	cells/ mg dust	cells/ mg dust	cells/ mg dust	cells/ mg dust
Group 2				
Acremonium strictum	ND	ND	-	-
Alternaria alternata	2	8	-	-
Aspergillus ustus	ND	2	-	-
Cladosporium cladosporioides I	10	74	-	-
Cladosporium cladosporioides II	ND	ND	-	-
Cladosporium herbarum	1	2	-	-
Epicoccum nigrum	6	5	-	-
Mucor and Rhizopus group	4	ND	-	-
Penicillium chrysogenum	26	23	-	-
Rhizopus stolonifer	ND	ND	-	-
Sum of the Logs	**4.4**	**5.5**	**-**	**-**
ERMI Value:	**5.6**	**-0.4**	**-**	**-**
ERMI Interpretation* **(see graph and description below)**	**Level 4**	**Level 2**	**-**	**-**

ND=None detected; the result is below the analytical detection limit or not present.

Charlie Li Ph.D., Lab Director
Or Approved EMSL Signatory

AIHA EMLAP Lab ID # 100194



Based on preliminary data published by the US EPA (chart above), the following ERMI levels can help predict whether an indoor environment is moldy. As research progresses, forthcoming data may change this interpretation and further refine the ERMI.

ND=None detected; the result is below the analytical detection limit or not present.

Level 4 = Buildings with an ERMI in the 4th quartile have the greatest likelihood of having a mold problem.

Level 3 = Buildings with an ERMI in the 3rd quartile have a greater likelihood of having a mold problem.

Level 2 = Buildings with an ERMI in the 2nd quartile have a lower likelihood of having a mold problem.

Level 1 = Buildings with an ERMI in the 1st quartile have the lowest likelihood of having a mold problem.

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For further technical information regarding the development of the Environmental Relative Moldiness Index refer to the April 2006 issue of "The Synergist" pages 39-43 or www.epa.gov/iaq

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107 Haddon Ave., Westmont, NJ 08108 Tel: 800-220-3675 Fax: 856-858-0648

Client: US EPA
26 W M. L. King Drive
Cincinnati, OH 45268
Attention: Dr. Steve Vesper
Project: Call # 10 Cleveland

EMSL Order ID: 370906264
Date Received: 6/25/2009
Date Analyzed: 7/2/2009
Date Reported: 7/7/2009

Environmental Relative Moldiness Index (ERMI) by Mold Specific Quantitative Polymerase Chain Reaction (MSQPCR) (EMSL Test Code:M050)

based on USA EPA SOP MERB-020, Revision No. 3, 7/11/02

Lab Sample Number	6264-1	6264-2	6264-3	-
Client Sample ID	Mosier-1	Vaughn-2	Aunt-3	-
Sample Location	-	-	-	-
Sample size	5mg Dust	5mg Dust	5mg Dust	-
EPA 36 Species Identification	cells/ mg dust	cells/ mg dust	cells/ mg dust	cells/ mg dust
Group 1				
Aspergillus flavus	ND	ND	ND	-
Aspergillus fumigatus	1	ND	ND	-
Aspergillus niger	6	4	ND	-
Aspergillus ochraceus	ND	ND	ND	-
Aspergillus penicillioides	52	9,647	8	-
Aspergillus restrictus	ND	14	ND	-
Aspergillus sclerotiorum	ND	ND	ND	-
Aspergillus sydowii	36	12	ND	-
Aspergillus unguis	14	ND	ND	-
Aspergillus versicolor	110	362	173	-
Eurotium (A.) amstelodami	159	664	7	-
Aureobasidium pullulans	4,412	4,066	108	-
Chaetomium globosum	5	3	ND	-
Cladosporium sphaerospermum	1	5	ND	-
Paecilomyces variotii	ND	4	ND	-
Penicillium brevicompactum	ND	ND	ND	-
Penicillium corylophilum	157	25	ND	-
Penicillium crustosum (group2)	33	ND	ND	-
Penicillium purpurogenum	ND	ND	ND	-
Penicillium spinulosum	161	ND	ND	-
Penicillium variabile	ND	ND	ND	-
Scopulariopsis brevicaulis	5	27	ND	-
Scopulariopsis chartarum	ND	ND	ND	-
Stachybotrys chartarum	1	ND	ND	-
Trichoderma viride	ND	ND	ND	-
Wallemia sebi	13	79	5	-
Sum of the Logs	**21.8**	**22.2**	**6.7**	**-**

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Environmental Relative Moldiness Index (ERMI) by Mold Specific Quantitative Polymerase Chain Reaction (MSQPCR) (EMSL Method:M050)

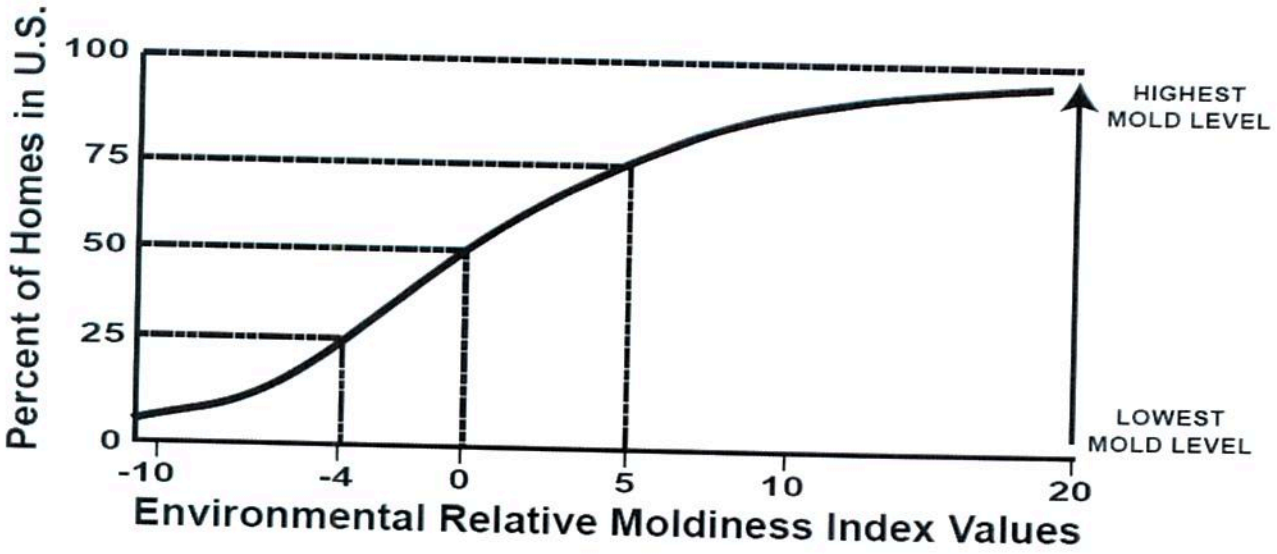
based on USA EPA SOP MERB-020, Revision No. 3, 7/11/02

Lab Sample Number	6264-1	6264-2	6264-3	-
Client Sample ID	Mosier-1	Vaughn-2	Aunt-3	-
Sample Location	-	-	-	-
Sample size	5mg Dust	5mg Dust	5mg Dust	-
EPA 36 Species Identification	cells/ mg dust	cells/ mg dust	cells/ mg dust	cells/ mg dust
Group 2				
Acremonium strictum	2	2	ND	-
Alternaria alternata	263	191	13	-
Aspergillus ustus	8	ND	ND	-
Cladosporium cladosporioides I	214	128	3	-
Cladosporium cladosporioides II	ND	ND	ND	-
Cladosporium herbarum	41	23	ND	-
Epicoccum nigrum	129	215	52	-
Mucor and Rhizopus group	39	ND	ND	-
Penicillium chrysogenum	140	32	ND	-
Rhizopus stolonifer	ND	ND	ND	-
Sum of the Logs	**13.4**	**9.8**	**3.3**	**-**
ERMI Value:	**8.4**	**12.4**	**3.4**	**-**
ERMI Interpretation* (see graph and description below)	**Level 4**	**Level 4**	**Level 3**	**-**

ND=None detected; the result is below the analytical detection limit or not present.

Charlie Li Ph.D., Lab Director
Or Approved EMSL Signatory

AIHA EMLAP Lab ID # 100194



Based on preliminary data published by the US EPA (chart above), the following ERMI levels can help predict whether an indoor environment is moldy. As research progresses, forthcoming data may change this interpretation and further refine the ERMI.
ND=None detected; the result is below the analytical detection limit or not present.
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Aspergillus niger	6	4	ND	-
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Penicillium chrysogenum	140	32	ND	-
Rhizopus stolonifer	ND	ND	ND	-
Sum of the Logs	**13.4**	**9.8**	**3.3**	**-**
ERMI Value:	**8.4**	**12.4**	**3.4**	**-**
ERMI Interpretation* **(see graph and description below)**	**Level 4**	**Level 4**	**Level 3**	**-**

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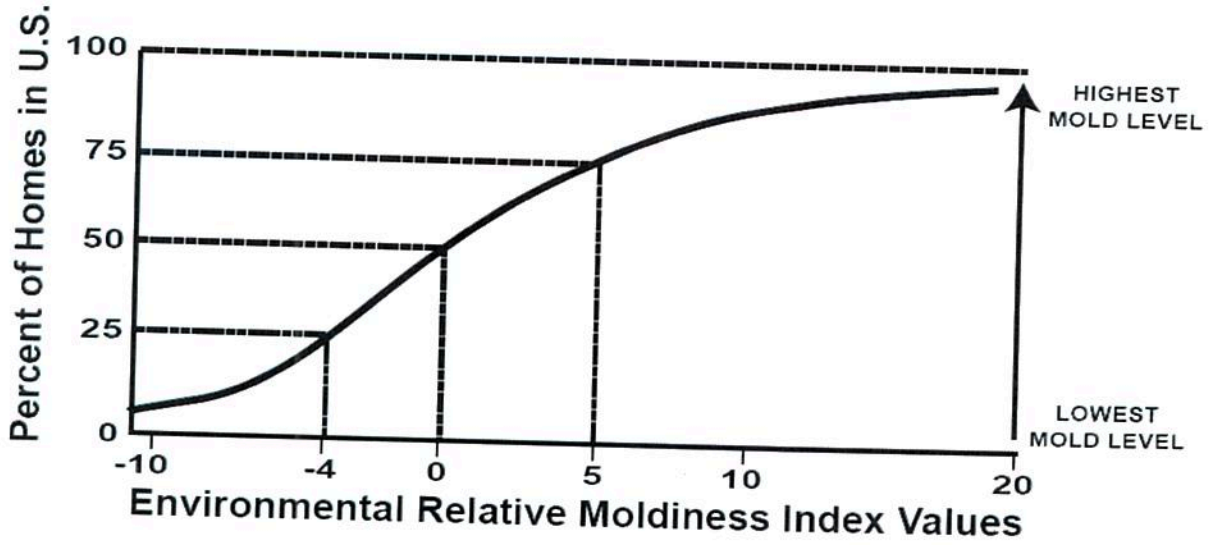
Charlie Li Ph.D., Lab Director
Or Approved EMSL Signatory

AIHA EMLAP Lab ID # 100194



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3. Your report will automatically be generated.
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Client:	US EPA
	26 W M. L. King Drive
	Cincinnati, OH 45268
Attention:	Dr. Steve Vesper
Project:	Call # 9 Boston
EMSL Order ID:	370906170
Date Received:	06/23/2009
Date Analyzed:	07/02/2009
Date Reported:	07/07/2009
Date Amended:	

Analyst:	QL, NL
Date Entry:	